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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/170,625	10/13/98	CHOI	D 8733D-6836

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EXAMINER

HAWRANEK, S

ART UNIT

PAPER NUMBER

2823

DATE MAILED
12/08/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/170,625

Applicant(s)
Choi

Examiner
Scott J. Hawranek

Group Art Unit
2823



☒ Responsive to communication(s) filed on Nov 1, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-24 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-24 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 23 recites the limitation "the firstthe second electrode" on pg. 28. There is insufficient antecedent basis for this limitation in the claim.
3. Claim 11 and 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The crystallization occurs faster at the negative electrode than at the positive electrode, however, the crystallization was done prior to the electrode formation?

Claim Objections

4. Claim 21 is objected to because of the following informalities: There appears to be a typographical error in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (VLSI Conf.) in view of Jai LL Ryu (IEEE).

Examiner points out that the terms in the claims are given there broadest possible interpretation and comprising in the preamble means any order unless specified by a some structural limitation or explicate sequence steps that would give the claim an order of sequence processing. See In re Zletz, 13 USPQ2d 1320 (Fed. Cir. 1989)(Claims are given their broadest possible interpretation during PTO prosecution).

Song et al. discloses in figs 1-4 and related text one of Song et al. embodiments teaches a method of forming TFT by forming a-silicon as an active layer (fig. 1) on an oxide layer which is formed on silicon wafer (fig. 1) (e.g., SOI); forming a gate insulating layer (e.g., oxide layer on the a-si layer) and a second a-silicon layer as an gate electrode (fig. 1, col. 2, pp. 188); patterning the gate and oxide layer using the same mask (fig. 1); depositing a thin metal Ni layer (~30 Å) on the first and second a-si layer (fig. 1, col 2, pp 188); doping impurities of a first conductive type in the first and second a-si layers (fig. 1); crystallizing the first and second a-si layers by applying a heat treatment at 500 [C] and an electric field (col. 2, pp 188). Al electrodes are deposited in

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order to make electrical contact to the device, the electrical contact would inherently result in the formation of an electric field on the substrate during the normal course of operation of the device.

Song et al. further suggests in order to reduce manufacturing cost using inexpensive glass substrates reduces the overall budget. (col 1, pp 188). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate glass substrates in order to reduce costs. In addition Song et al. teaches SOI which is notoriously obvious in the art to reducing parasitic capacitance. Therefore, is held, absent evidence to the contrary, that using a glass substrate is an inherent aspect of Song et al. disclosure in which SOI would have been formed. See In re Best, 195 USPQ 428 (CCPA 1977) and In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Performing the doping of the two layers before or after the thin metal deposition is *prima facie* obvious because the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

In addition, Jai Il Ryu (IEEE) discloses doping with PH3 prior to forming the thin metal layer. The dopant gas is conventionally used in the art as a result the claims are *prima facie* obvious without showing that the claimed ranges achieve unexpected results relative to the prior art range. *In re Woodruff*, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990). See also *In re Huang*, 40 USPQ2d 1685, 1688 (Fed. Cir. 1996) (claimed ranges of a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art). See also *In re*

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Boesch, 205 USPQ 215 (CCPA) (discovery of optimum value of result effective variable in known process is ordinarily within skill of art) and In re Aller, 105 USPQ 233 (CCPA 1955) (selection of optimum ranges within prior art general conditions is obvious).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott J. Hawranek whose telephone number is (703) 305-0070. The examiner can normally be reached on Monday thru Friday from 8:30 to 6:00 P.M. .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy, can be reached on (703) 308-4918. The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1778.

Scott J. Hawranek
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December 2, 1999

Scott J. Hawranek
Examiner
Art Unit: 2823